

REMARKS

Reconsideration and allowance are requested in view of the amendments and remarks herein.

The Examination

The drawings were objected to for failing to illustrate a feature claimed in claim 3. The specification was objected to for failing to provide proper antecedent basis for subject matter claimed in claim 3. Claim 3 has been cancelled.

Claims 6 – 8 were rejected under 35 U.S.C. Section 101 as being directed to non-statutory subject matter. Claims 6 and 7 have been amended following the examiner's suggestion. Claim 8 has been cancelled.

Claims 1, 4, 5, 6, 8, and 17 – 19 were rejected under 35 U.S.C. Section 103(a) as being unpatentable over US Patent 6,645,154 to Oka ('Oka') in view of US Patent 6,616,613 to Goodman ('Goodman').

Claims 2 and 3 were rejected under 35 U.S.C. Section 103(a) as being unpatentable over Oka in view of Goodman and further in view of U.S. Patent 5,467,771 to Narimatsu et al. ('Narimatsu'). Claims 2 and 3 have been cancelled.

Claim 7 was rejected under 35 U.S.C. Section 103(a) as being unpatentable over Oka in view of Goodman and further in view of U.S. Patent 5,111,817 to Clark et al. ('Clark').

Claims 9 – 16 and 20 were rejected under 35 U.S.C. Section 103(a) as being unpatentable in view of U.S. Patent Number 6,544,173 to West et al. ('West') in view of Oka and further in view of Goodman. Claims 9 and 20 have been cancelled.

Amended and New Claims

In order to more clearly describe the invention, Applicants have amended claims 1, 6, 7, 10, 13, 17 and 18; cancelled claims 2, 3, 8, 9 and 20; and added new claims 21 – 25. With these amendments claims 1, 4 – 7, 10 – 19 and 21 – 25 are pending in this Application.

Specifically, independent claim 1 has been amended to describe a blood-pressure monitoring device featuring a microprocessor configured to: i) determine a time difference between a first time-dependent signal generated by a first module, and second time-dependent signal generated by an optical module; and iii) determine blood-pressure information from the time difference. Support for this amendment is found throughout the specification, particularly at paragraphs 48 – 60 and in the description of Fig. 5 contained therein.

Claim 1 has also been amended to recite both a ‘short-range wireless transmitter configured to transmit the blood pressure information to a remote device’ and ‘a housing configured to be worn on the patient’s body that comprises the microprocessor and the short-range wireless transmitter and connects to the optical module’. Support for these amendments is also found throughout the specification, particularly at paragraphs 31 – 40 and in the description of Figs. 1, 2 and 3.

Claims 10 and 13 have been amended to recite a ‘short-range wireless transmitter’ (claim 10) and a ‘short-range wireless receiver’ (claim 13) operating on a ‘802.15 ... wireless protocol’. 802.15 is a technical term for a Bluetooth™ wireless protocol, which was recited in originally filed claims 10 and 13.

New claims 21-25 include many of the limitations of the amended claims. In addition, new claim 21 includes ‘a thin-film pressure sensor’. This feature is described throughout the specification, particularly at paragraph 38 and in the description of Fig. 3 contained therein.

New claim 22 includes ‘an electrical impedance sensor’. This feature is described throughout the specification, particularly at paragraph 65.

New claim 23 includes ‘a patch that attaches the first module and the optical module to a patient’. This feature is described throughout the specification, particularly at paragraph 62.

New claim 24 includes ‘a location-determining component that determines the location of the monitoring device’. A location-determining GPS is described throughout

the specification, particularly at paragraph 46 and in the description of Figs. 3 and 4 contained therein.

New claim 25 describes a patient-monitoring system featuring ‘a watch component’, ‘a short-range wireless transmitter’, ‘a wireless network’, and ‘an Internet-based system’. These features are described throughout the specification, particularly at paragraphs 37 – 47 and in the description of Figs. 3 and 4 contained therein.

The Prior Art

The examiner cited the following prior art references in the Office Action mailed August 23, 2005.

Oka discloses an apparatus featuring an inflatable cuff, a device which determines a patient’s blood pressure while the cuff’s pressure is changed, and an optical that continuously detects a blood pressure waveform of a subject.

Goodman discloses a health-monitoring and biofeedback system comprising a photoplethysmography (PPG) sensor, a processing device, a wireless interface, and an Internet-based system for determining, displaying and analyzing various cardiovascular parameters.

Clark discloses an enhanced noninvasive system and method for monitoring a patient’s arterial oxygen saturation, and which also provides continuous measurement of blood pressure.

West discloses a wireless medical telemetry system including a wireless patient monitor that collects vital signs and a central station adapted to establish communications with the patient monitor through a wireless transceiver.

Narimatsu discloses a pressure pulse wave sensor for detecting a pressure pulse wave produced from an arterial vessel of a living subject synchronized with the subject’s heartbeat.

Patentability Over The Prior Art

The prior art fails to disclose the invention recited in the Application’s amended and new claims. Specifically, unlike the claimed invention, Oka is silent to a

microprocessor configured to: i) receive two time-dependent signals, each originating from a different sensor; ii) determine a time difference between the signals; and iii) determine blood pressure information from the time difference. Instead, Oka describes a cuff-based blood pressure monitor that additionally uses a single optical sensor to estimate blood pressure. Oka also fails to describe a short-range wireless transmitter that transmits blood pressure information to a remote device, let alone amended claim 1's recitation of a housing worn on a patient's body that includes both the microprocessor and the short-range wireless transmitter and connects to an optical module.

The Examiner's secondary references fail to cure the deficiencies of Oka. For example, Goodman, Clark and Narimatsu describe systems for monitoring blood pressure that include various sensors. But in contrast to the claimed invention, these systems rely on a single sensor to determine blood pressure; they say nothing about using time differences between signals generated by different sensors as a way to determine this property. The references also fail to describe claim 1's body-worn housing.

In summary, Oka, taken alone or in combination with any of the other cited prior art, fails to disclose all the limitations of the amended or new claims.

Based on the above, Applicants submit that the independent claims of the present invention, as amended, are significantly removed from Oka, either taken alone or combined with the secondary references. The dependent claims are even further removed from these references. Applicants therefore respectfully request a notice of allowance for all the pending claims of the present Application.

Respectfully Submitted,



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